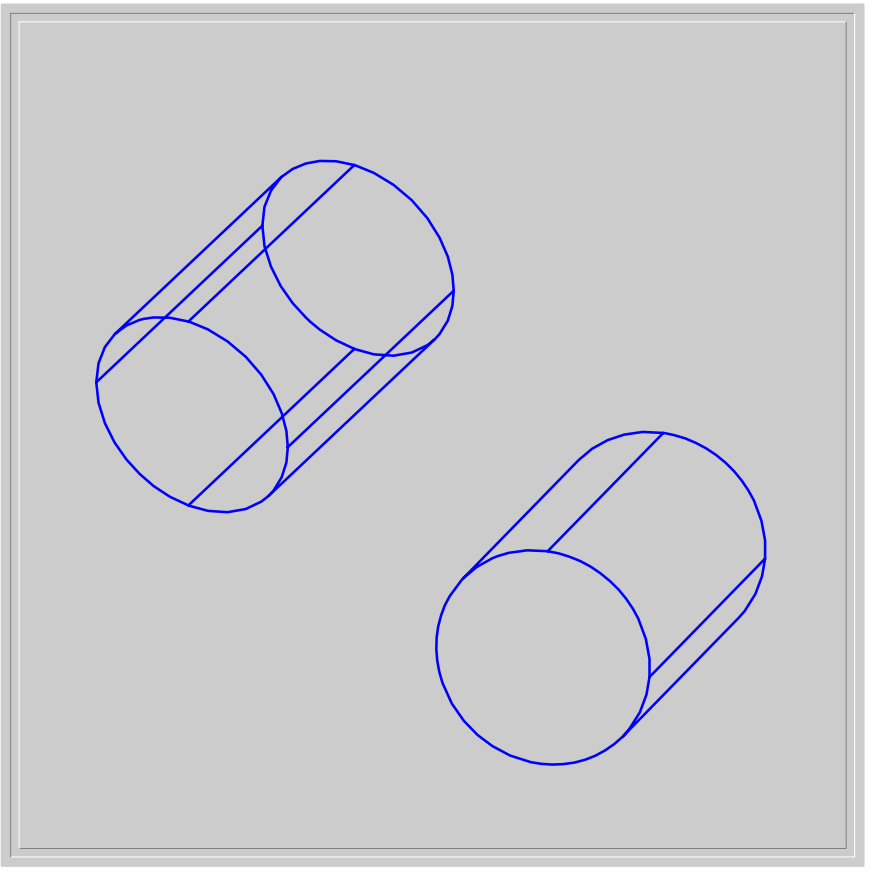


Viewing Parts

I-DEAS™ Tutorials: Fundamental Skills

Learn how to:

- view a part from different angles
- autoscale and “clean up” the graphics display
- dynamically change the view
- use different dynamic viewing options
- change the display modes
- change the color of a part
- change workplane background color

Before you begin...

Prerequisite tutorials:

- Getting Started (I-DEAS™ Multimedia Training)

  –or–

  Quick Tips to Using I-DEAS
  –and–
  Creating Parts

If you didn't start I-DEAS with a new (empty) model file, open a new one now and give it a unique name.

File
Open

Open Model File form

Model File name: any unique name
OK

Make sure you're in the following application and task:

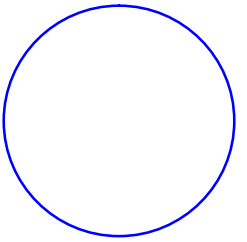
Design, *Manufacturing*, or *Simulation*
Master Modeler

Set your units to mm.

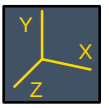
Options
Units

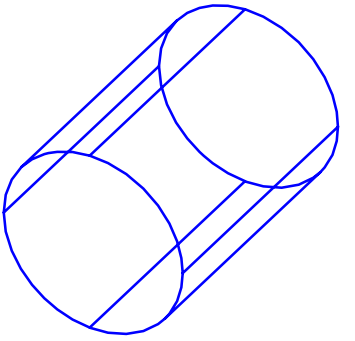
mm (*milli newton*)

First, sketch a circle. Don't worry about dimension values.

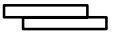


Then extrude the circle 100mm to create a part like the one shown.





Save your model file.



File
Save

Warning!
If you are prompted by I-DEAS to save your model file, respond:

No

Save only when the tutorial instructions tell you to—not when I-DEAS prompts for a save.

If you make a mistake at any time between saves and can't recover, you can reopen your model file to the last save and start over from that point.

Hint
To reopen your model file to the previous save, press Control-z.

View a part from different angles 1 of 2

If you have the graphics hardware that supports it, a display preference will give smooth transitions between view selections. Make sure the following setting is turned on before you switch between the views.

Options
Preferences...

Preferences form


Display...

Display Preferences form

Show View Transition (toggle on)

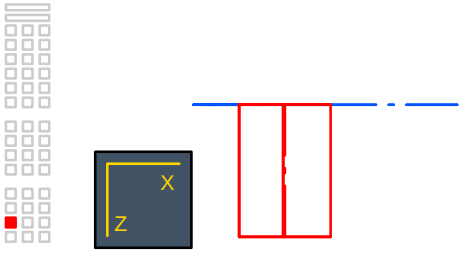
OK

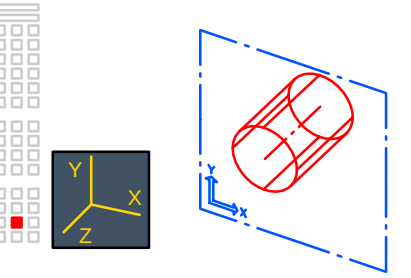
OK

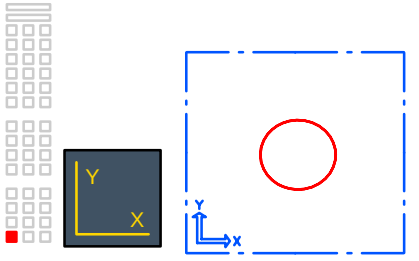
View a part from different angles 2 of 2

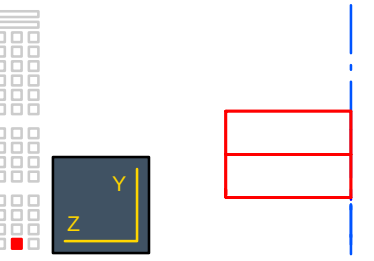
There may be times when you want to view a sketch or part from different angles.

The icons in the lower left corner of the icon panel change the viewing direction to front, top, bottom, right, and isometric view. Try each of the icons to see how the view changes.









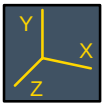
Autoscale and “clean up” the graphics display 1 of 5

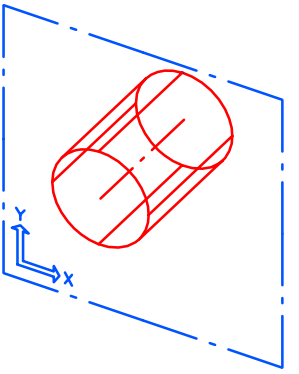
Other icons are available in the lower portion of the icon panel to help you display your parts for better visibility. The available icons are the *Redisplay* and *Zoom All* icons.

We’ll practice with these on the next few pages.

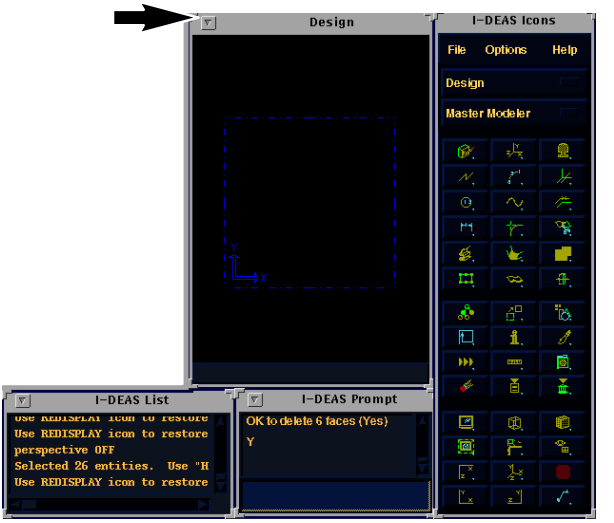
Autoscale and “clean up” the graphics display 2 of 5

Make sure you’re in isometric view.





First, make your graphics window smaller by grabbing the upper left hand corner of the window and dragging it to the right.

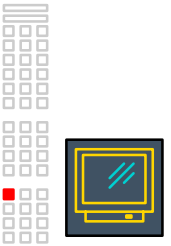


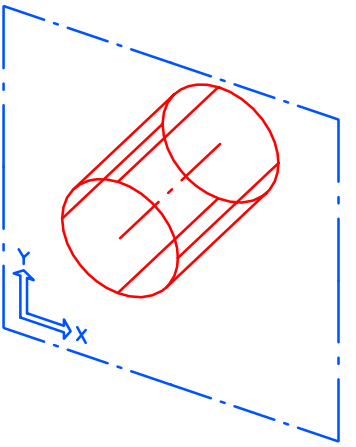
Things to notice

After you resize the window, the image may no longer be displayed properly or at all.

Autoscale and “clean up” the graphics display 3 of 5

Use the *Redisplay* icon to restore the graphics after a window resize.

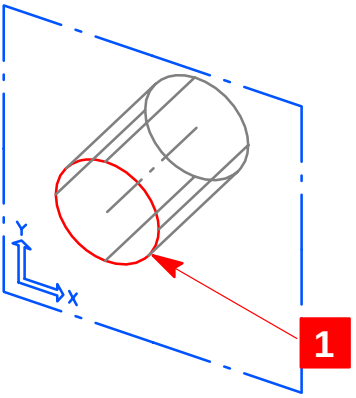


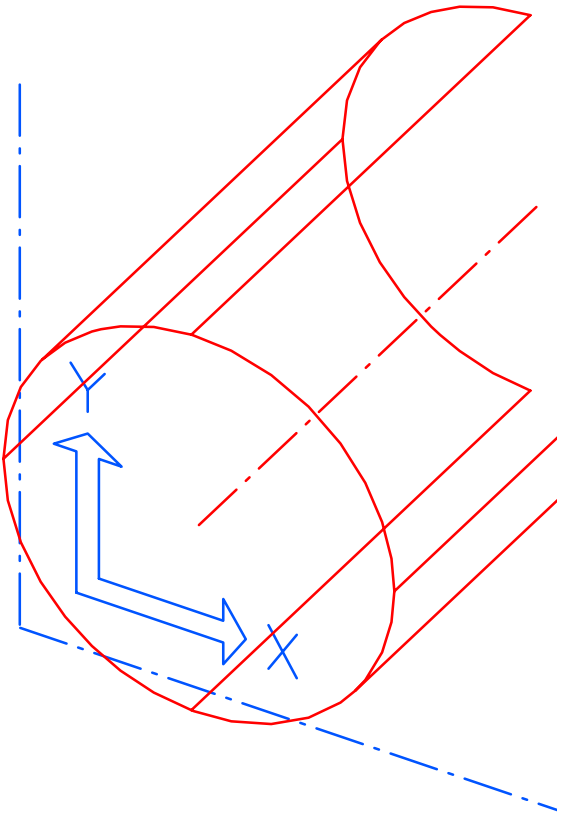


Autoscale and “clean up” the graphics display 4 of 5

To selectively zoom, you can pre-select lines or curves, then use the *Zoom All* icon.

1 pick an edge

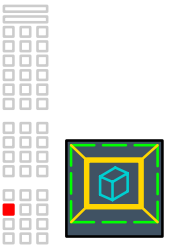


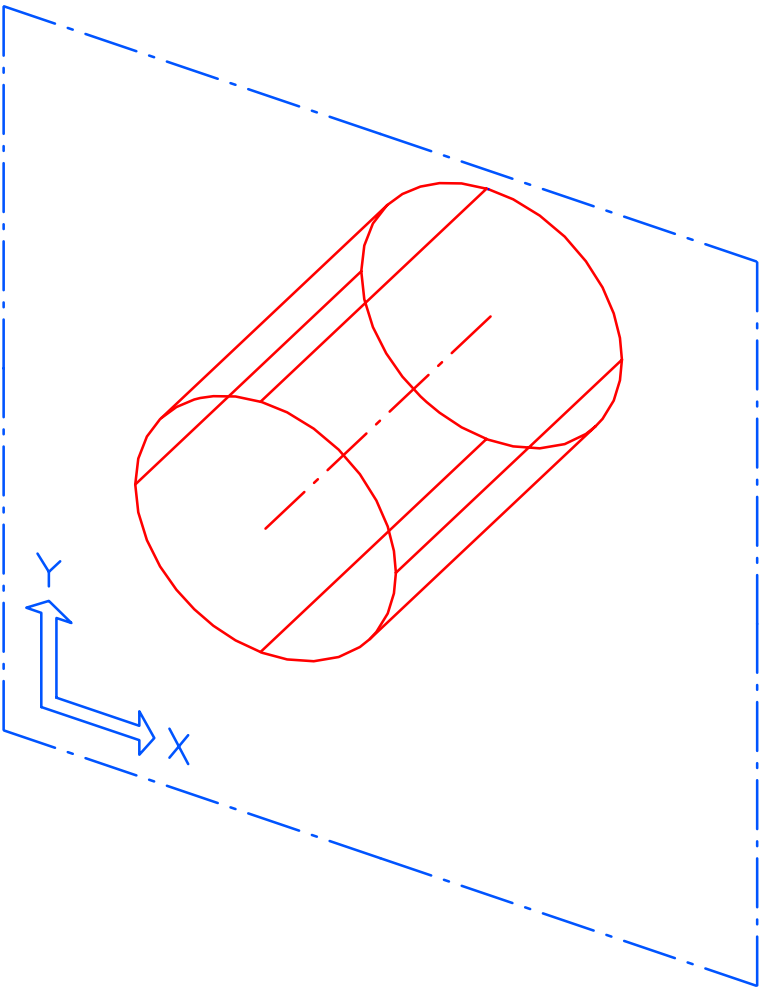


Autoscale and “clean up” the graphics display 5 of 5

Use the *Zoom All* icon to scale the display so the entire model fits on the screen. First, make sure nothing is selected.

Deselect All



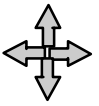


If you have trouble picking graphics, you can use dynamic viewing to rotate or zoom in on the part or feature. Dynamic viewing also works within the middle of a command sequence without aborting the command.

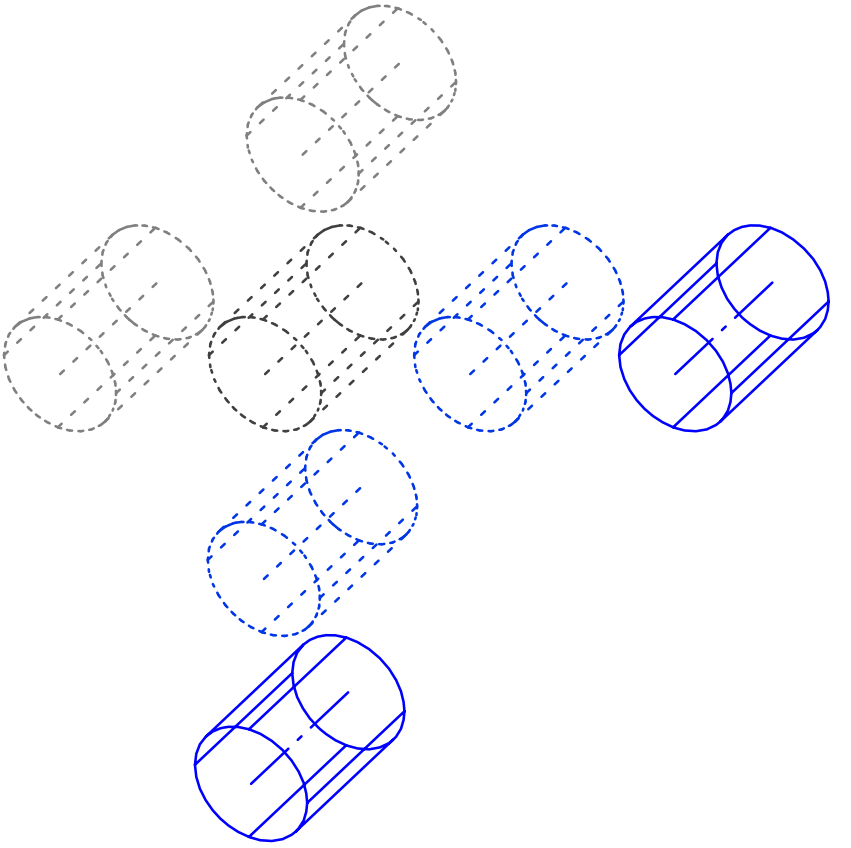
To use the **pan** dynamic viewing function, start with the mouse pointer in the center of the graphics window.

 do not press any mouse buttons

Hold the **F1** key.



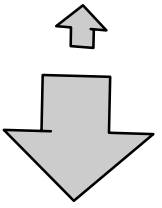
Pan left and right, or up and down on the screen.



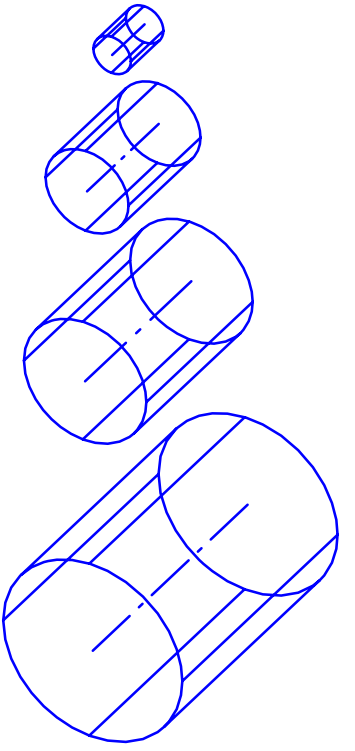
To use the **zoom** dynamic viewing function, start with the mouse pointer in the center of the graphics window.

 do not press any mouse buttons

Hold the **F2** key.



Move the mouse down to zoom in, up to zoom out.



 Use pan (F1) first to center the area you want to zoom in on.

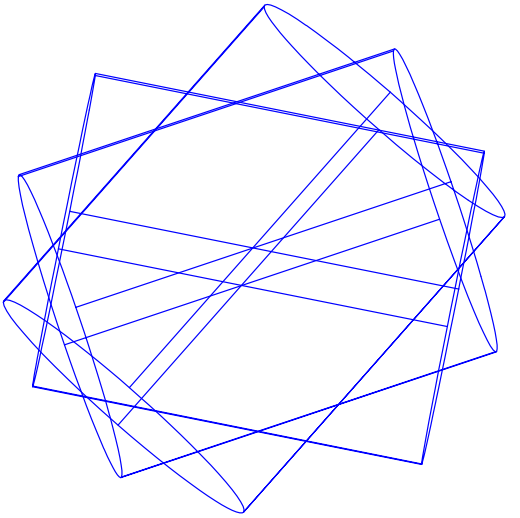
You can do 2D rotation on the screen.

Start with the mouse pointer near a corner of the graphics window.

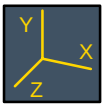
 do not press any mouse buttons

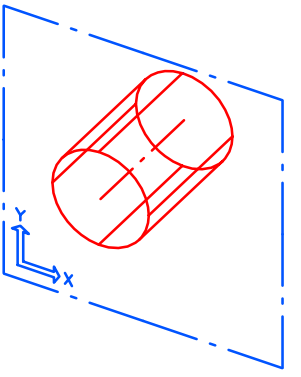
Hold the **F3** key.

Rotate the mouse pointer around the center of the screen.



Reset to isometric view.



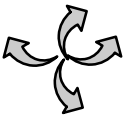


You can also do 3D rotation on the screen.

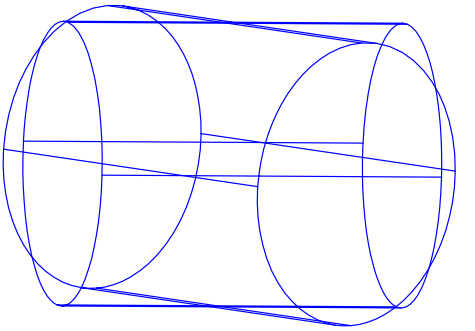
Start with the mouse pointer in the center of the graphics window.

 do not press any mouse buttons

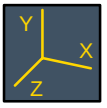
Hold the **F3** key.

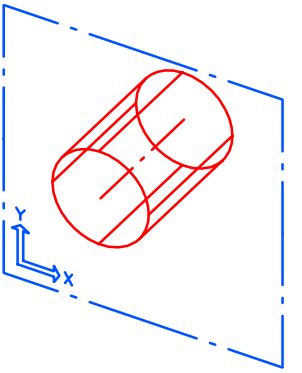


Move the mouse pointer up/down or left/right.

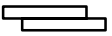


Reset to isometric view.





Recovery Point

 *File*
Save

Use different dynamic viewing options1 of 5

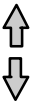
There are other options available for using the F1, F2, and F3 function keys.

The other options are selected using the F6 function key. When you hold the F6 key down, you can select from one of three different banks of viewing options.

Start with the mouse pointer in the center of the graphics window.

 do not press any mouse buttons

Hold the **F6** key.



Move the mouse pointer up and down to see the different banks of viewing options displayed at the bottom of the *Graphics* window.

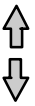
- Bank 1 options are those you tried on the previous pages.
- Bank 2 provides different rotation options with the F1 and F2 keys.
- Bank 3 provides partial display options if using the X3D driver, or hardware clipping options on some graphic devices.

Let’s try each of the options on the next few pages.

Use different dynamic viewing options2 of 5

Rotate around the X axis only.

Hold the **F6** key.



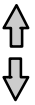
Move the mouse pointer up and down until the 2 is highlighted in the bank selection box, then release the F6 key.

Move the mouse pointer to the center of the graphics window.

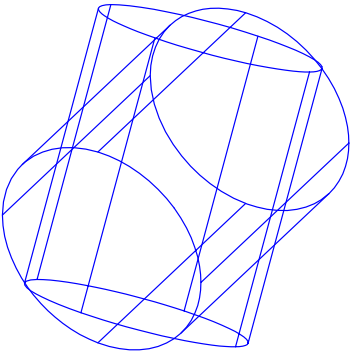
 do not press any mouse buttons

Hold the **F1** key.

Move the mouse pointer left and right and notice how little movement of the part there is.



Move it up and down and notice how the part rotates around the X axis.



Reset to isometric view.

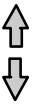
Use different dynamic viewing options3 of 5

Rotate around the Y axis only.

Move the mouse pointer to the center of the graphics window.

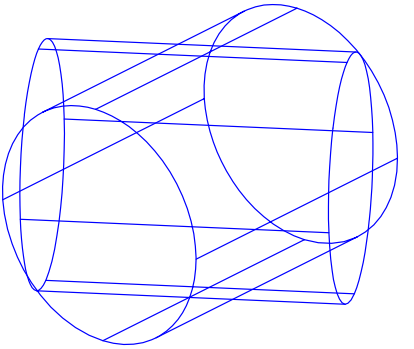
 do not press any mouse buttons

Hold the **F2** key.

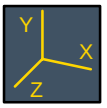


Move the mouse pointer up and down and notice how little movement of the part there is.

Move it left and right and notice how the part rotates around the Y axis.



Reset to isometric view.



You can also reset your view to your starting position by pressing the **F5** key. However, pressing F5 does not change the bank of viewing options (1, 2, or 3).

Use different dynamic viewing options4 of 5

Bank 3 options are different depending on the device driver you are using.

- If you are using the X3D driver, this bank of options controls partial display for dynamic viewing.
- If you are using a hardware device driver such as OGL, this bank of options controls dynamic clippings.

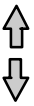
For information on these options, refer to the sources given in the “wrap-up” section of this tutorial.

To switch device types, you must exit the software and start again using the “–d” option ($ ideas –d).

Use different dynamic viewing options5 of 5

Reset your viewing options to bank 1.

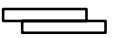
Hold the **F6** key.



Move the mouse pointer up until the 1 is highlighted in the bank selection box, then release the F6 key.

Reset to isometric view and use redisplay.

Recovery Point



File
Save

You will use bank 1 functions the most. You may not use bank 2 or bank 3 functions that much, but are now at least familiar with their capabilities.

Change the display modes 1 of 4

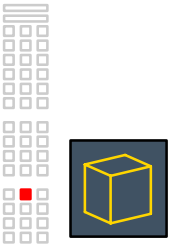
You have three basic display modes to choose from:

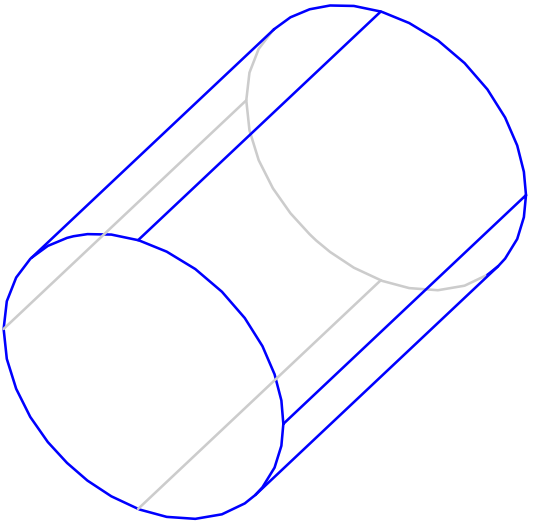
- *Line*
  Line displays a wireframe representation of geometry.
- *Hidden*
  Hidden Software shows surfaces, edges, wireframe geometry, etc., using I-DEAS software to generate the display.
  Hidden Hardware shows surfaces, edges, wireframe geometry, etc., but the display is hardware dependent.
- *Shaded*
  Shaded Software displays your part as a shaded image, but you can't use dynamic viewing.
  Shaded Hardware uses local hardware capabilities and gives you dynamic viewing ability while using the shaded mode.

The two *Hardware* modes (*Hidden* and *Shaded*) are available only on certain hardware types.

If the *Hardware Hidden* and *Shaded* options are grayed out, you are using the X3D display type, and not one of the hardware device types. To switch device types, you must start I-DEAS using the "–d" option ($ ideas –d).

First, change to *Hidden Software* or *Hidden Hardware* view.

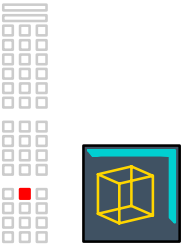




Things to notice

The lines in back are visible, but dimmed.

Next, change the options for the display modes.

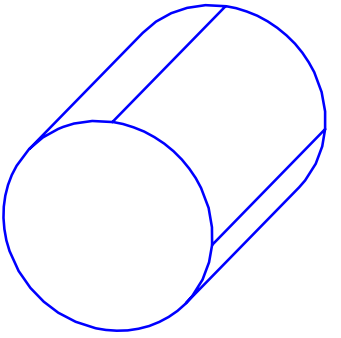


Line & Hidden Line Options form

Hidden – Software

Hidden line style: *Invisible*

OK

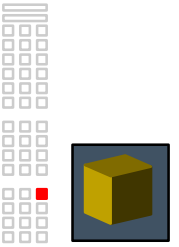


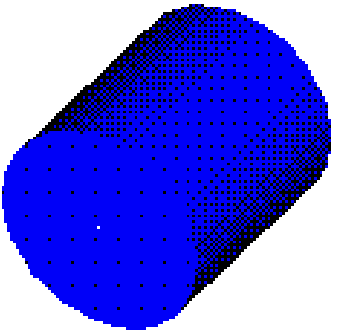
Things to notice

Now, the hidden lines are completely removed.

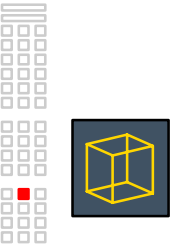
Change to *Shaded Software* or *Shaded Hardware* view.

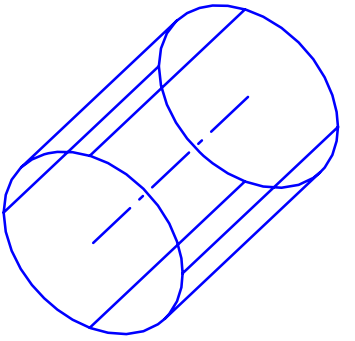
Dynamic viewing (function keys F1, F2, and F3) is not available with *Shaded Software*.





Change back to *Line* view.





Recovery Point

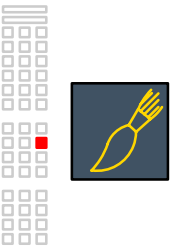
File
Save

There may also be times when you want to change the color of the part or its entities to more realistically represent the finished product.

Change the color of a part 2 of 4

First, change the color of the entire part to red.

Deselect All



Pick twice (without moving the mouse) on any vertex, edge, or surface so the part is shown selected with white boxes.

(Done)

Surface Appearance form

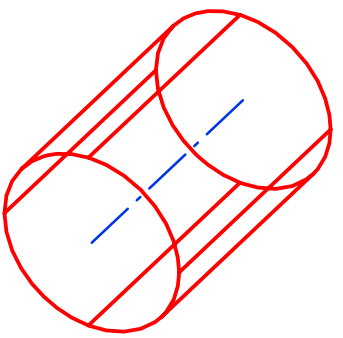
Color

Object Color: form

11 – *Red*

OK

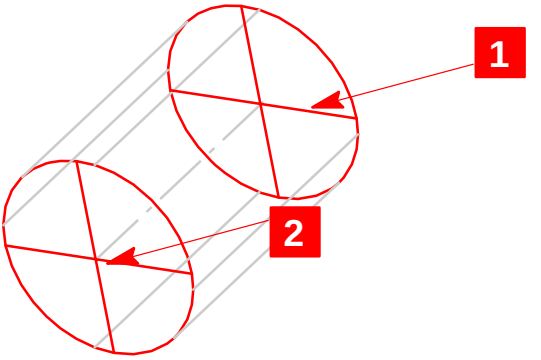
OK



Change the two end faces to blue.

1 pick on first face

2 hold shift key down and pick on second face

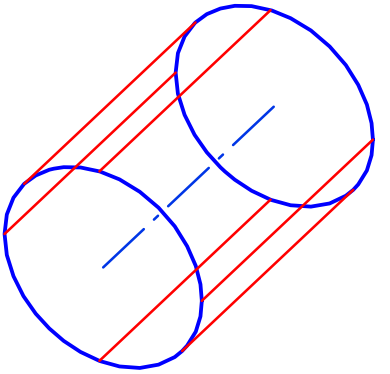


 (Done)

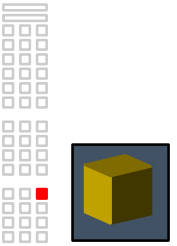
Surface Appearance form

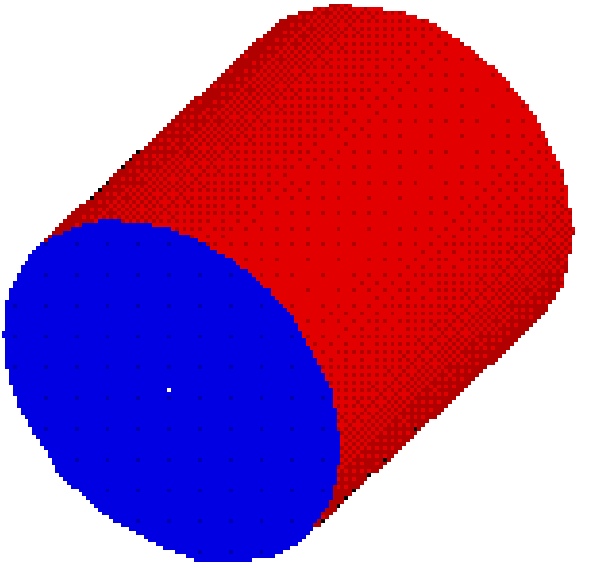
 *Color*: blue

 *OK*

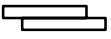


Switch to *Shaded Software* or *Shaded Hardware* view.





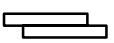
Recovery Point



File
Save

Change workplane background color1 of 2

You can also change the background color of the workplane.



Options
Background Color

Directory

White

Select the *Redisplay* icon if it doesn't automatically update.

Try some other background colors to see how it affects seeing the part.

Warning!
If you change the background color to white, you won't be able to see any labels that are also displayed as white.

Change workplane background color2 of 2

Change the background color to black.

Options
Background Color

Check *I-DEAS Prompt*.

black (type in and press Return)

Save the model file.

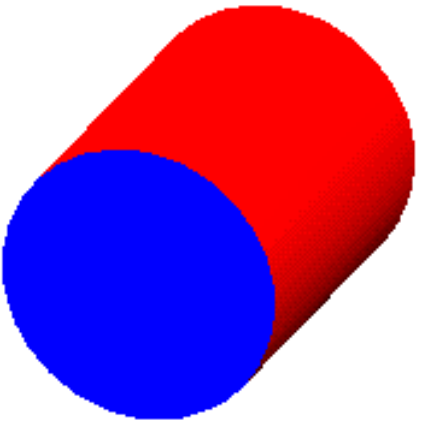
File
Save

The “On your own” exercise on the next few pages applies only if you are using a hardware display type. If you would rather try it later, skip to the last page for wrap-up instructions.

If the *Shaded Hardware* or *Hidden Hardware* icons are grayed out, do not continue. Stop here and skip to the last page.

Use the optional hardware-supported graphics capabilities.

- Display the part using the *Shaded Hardware* option.



Things to notice

Notice that you can use dynamic viewing in this mode.

If the *Shaded Hardware* icon is grayed out, you either don't have graphic hardware that can support it, or you have started I-DEAS using the X3D display type. To select a hardware display type, you may need to exit I-DEAS and start it using the option ideas –d. Then pick a hardware device type such as OGL or PEX.

If you don't have this icon available, do not continue with the rest of this tutorial. Skip to the last page for wrap-up instructions.

- Now, display the part using advanced lighting and notice the difference.

Shaded Options form

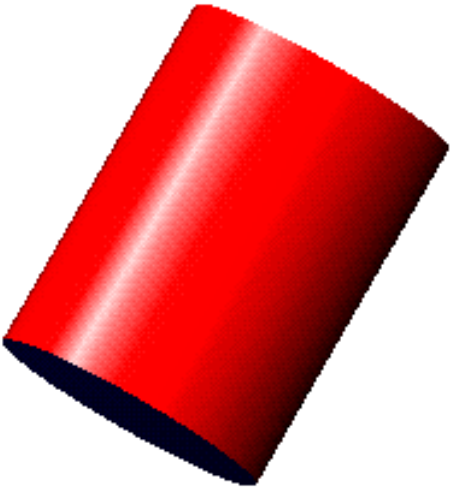
Hardware support...

Hardware Support form

Advanced lighting

OK

OK



- Change the part to look like wood.

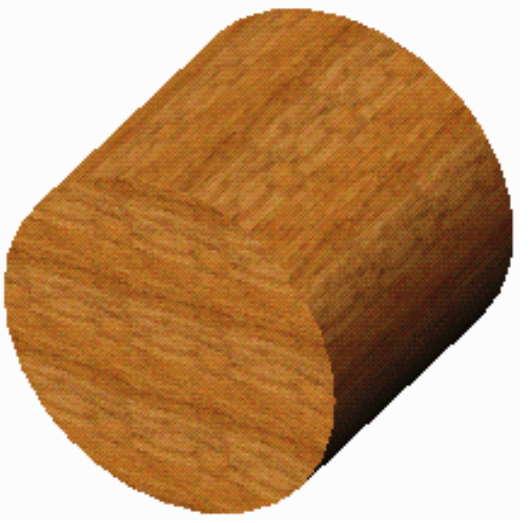
Remember
Don’t forget to click twice to select the entire part.

Surface Appearance form

Color: white
Texture/Decal: oak

Active in Viewport

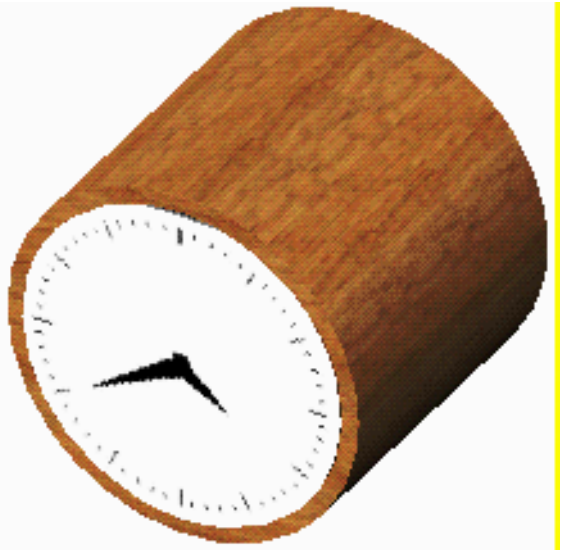
1
OK



- Map a clock decal on the end face.

Pick only the front face of the part.

☐ *Texture/Decal*: clock (decal)



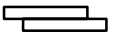
Tutorial wrap-up

You have completed the Viewing Parts tutorial.

If you did the “On your own” exercise, you can delete or put away the part. This part is not used in any other tutorials.

See also...

For additional information on many of the concepts covered in this tutorial, see the following in the I-DEAS *Help* facility:


Help, Manuals, Table of Contents

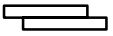
Interacting with I-DEAS
- Menu-driven dynamic viewing
- Setting the view
- Displaying objects

Also, search for the phrases:
- dynamic clip
- Partial display

What’s next?

After exiting, choose the Fundamental Skills tutorial that is next in the learning path you are following.

To exit this tutorial, select:


File
Exit

Warning!
Do not use the menu in the *I-DEAS Icons* window to exit. Use the menu in the Acrobat Reader window.

I-DEAS Master Series™ Online Tutorials

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